

TERRA

THE NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY

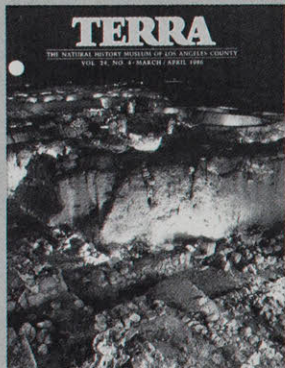
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TERRA

THE MEMBERS' MAGAZINE
OF THE NATURAL HISTORY MUSEUM
OF LOS ANGELES COUNTY
AND THE PAGE MUSEUM
OF LA BREA DISCOVERIES

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COVER: The Moon over Tell-Mardikh. In 1975 Italian archaeologist Paolo Matthiae uncovered archives containing clay tablets dating from the third millennium B.C., allowing him to identify the remains of the lost city of Ebla. Photograph by James L. Stanfield, National Geographic Society.

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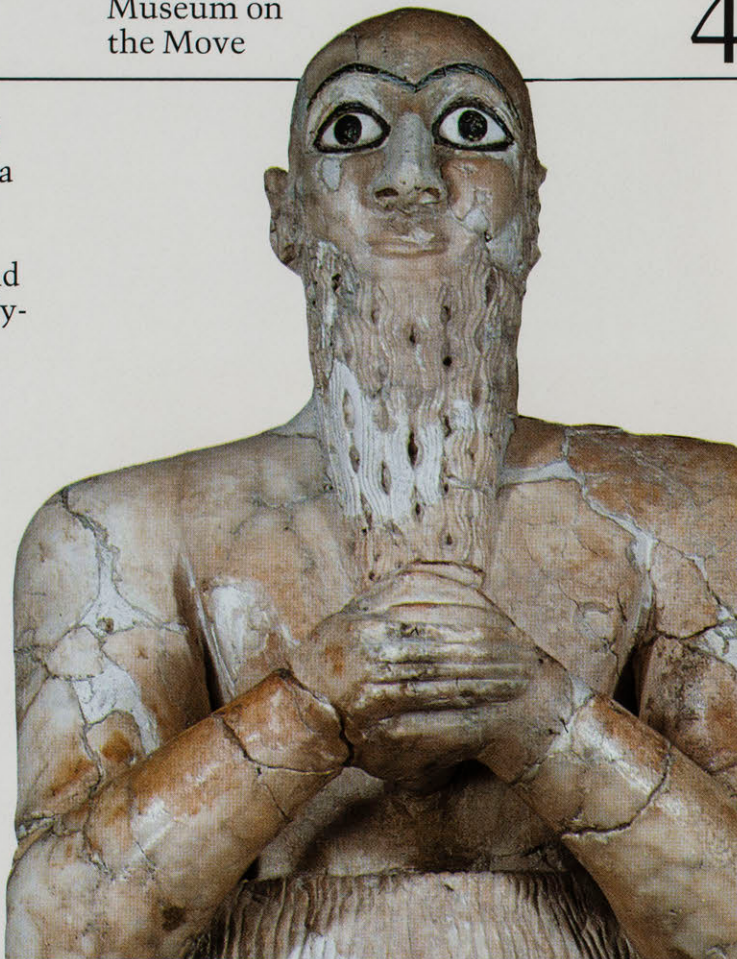
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MUSEUM ON THE MOVE

WHAT DO YOU THINK? NOW WE KNOW...What do our 16,000 members think of the Natural History Museum and the Page Museum? Museum members were surveyed in 1985 by Dr. Jacqueline S. Aames of Aames Research. The survey objectives were to obtain a profile of members, to discover what members specifically like and dislike about the museums, and to learn what changes they would like to see made.

Reasons for Joining the Museum. We discovered that people join the museum or renew their membership because they want to learn something and enjoy the learning process; because they are attracted by the membership benefits, travel, and special events offered to them; and because they feel that museums are good places for family outings. Almost a quarter of the members surveyed gave *Terra* as one reason for joining or renewing. Most members belong to the museum because they believe in supporting science, worthwhile causes, and the quality of life in Los Angeles. Long-standing members particularly feel strongly about this. The vast majority of members surveyed say they have always been fascinated by natural history.

Member Profile. Members say they are pleased with the museum and with being members, and almost all of them intend to renew their memberships, especially those who visit frequently. Four out of five members feel that they are getting their money's worth from membership.

While over one-third have belonged for seven or more years, 16 percent of the members surveyed have belonged for four to six years, 22 percent for one to three years; 27 percent joined within the past year.

Museum members are quite similar geographically and demographically. Most members surveyed (93 percent) live in Los Angeles County, the majority residing in the Westside/South Bay area. The overwhelming majority travel by car when they visit the museums.

More than three-quarters of the members surveyed (88 percent) classify themselves as Caucasians. Almost half have received graduate training. Three out of four are forty years old or older, and their children do not reside with them. More than half have household incomes exceeding \$50,000. Within the past year, however, younger people have been joining the museum. These new members

are more likely to have children at home and are more ethnically diverse.

Other Findings of Interest. Approximately half of the museum members responding to the survey lived in the Los Angeles area when they were children, and the majority of these people, as children, were taken by their parents to visit the Natural History Museum. Two-thirds have visited the Natural History Museum within the past year, while slightly fewer than half visited the Page Museum in the same period of time. Approximately two-thirds of the members visit the two museums from two to six times in a two-year period. Fewer than one in ten members have not visited either museum in the past two years. Almost four out of ten members are usually accompanied by children (or grandchildren) when they visit the museums. The majority of members bring out-of-town guests to the museums and usually take them to both museums or just to the Page.

The members are generally making good use of the special services the museum offers. Approximately half of the members had attended at least one Open House, and more than 90 percent are



interested in attending more special events for members. A majority of members visit the museums' shops or cafeteria at least once a year, and almost all who do visit make one or more purchases. While the travel program is something members are beginning to discover, the kinds of trips members want most in the members' travel program are those that focus on a particular field of natural history.

Members feel it is absolutely essential that a natural history museum in Los Angeles should have exhibits on the evolution of life, California history, North American Indians, and prehistoric animals and dinosaurs. Among possible new permanent exhibits, the members' top choices are dinosaurs and North American Indians, but a new bird hall would also be popular. All these are being planned as part of our Seventy-Fifth Anniversary Campaign (see *Terra*, January/February 1986).

The difficulty of finding parking has made almost half our members decide, at least once, not to go to the museum when an event was being held at the Coliseum. A third of the members also feel parking is difficult at the Page Museum. These

concerns are being addressed by our Seventy-Fifth Anniversary Campaign.

Changes and Improvements Desired by Members. Members are very interested in a new Discovery Room for children (plans for which are being discussed), and more than three out of four said they would visit a branch of the museum near their home at least once a year (possibilities for satellite museums are currently being explored).

Two-thirds of the membership are interested in attending special exhibits that have admission charges, such as the current exhibit Ebla to Damascus and last summer's Maya—Treasures of an Ancient Civilization. Their favorite subjects for such exhibits are archaeology, people of different cultures, volcanoes and earthquakes, and primitive and folk art.

APRIL 12—SAVE THE DATE FOR THE DINOSAUR BALL! Mark your calendar! The Natural History Museum's Fourth Annual Dinosaur Ball has been set for Saturday, April 12, 1986. Cocktails will be offered at 7:30 p.m. in the ground floor California History Hall, and dinner will

be served in the main floor mammal halls.

Ball Chairman William Mingst, with assistance from Dinosaur Ball Committee members Mrs. Allan M. Herbert and Shelton Ellis, announced the ball with a mailing of original designer dinosaur magnets. Delivered in gold Gump's boxes, the collector buttons remind everyone to save the date. Last year's magnetic dinosaurs brought in so many reservations that the ball was almost sold out before invitations were mailed, so be sure to make your reservations early. Tickets are \$225 per person, and proceeds benefit the museum's exhibition program. For more information, please call Kate Sibley at 213/744-3337 or Mike Bell at 213/744-3438.

Many members are attracted to the Natural History Museum by the benefits and the special events it offers. The annual Open House gives members a chance to explore behind the scenes at the museum. (Page 4, left) Dr. Sarah George, Assistant Curator, shows off a tiger pelt in the mammalogy range. (Page 4, right) In the herpetology section, Dr. Robert Bezy, Associate Curator, displays a rainbow boa to fascinated members. (Right) Curator Dr. James McLean points out an interesting feature of a western Australian giant whelk, the world's largest living gastropod. Photographs by Susan Gipson.



The Glory of Ancient Syria

EBLA TO DAMASCUS, PART I

by GIORGIO BUCCELLATI and
MARILYN KELLY-BUCCELLATI

One of the most impressive artistic achievements anywhere in the Near East, small animal statues (like this hedgehog) were produced at Buqras in eastern Syria some



eight thousand years ago. They are now stored in the new regional Museum of Der ez-Zor in eastern Syria. Photograph courtesy of the Denver Museum of Natural History.

Suppose that shortly after the beginning of the last century Los Angeles hosted a major international exhibit dedicated to the most important archaeological discoveries of the time. In the wake of Napoleon's campaign in Egypt and Champollion's interpretation of the Rosetta Stone, that exhibit would clearly have been devoted to Egypt.

Toward the end of the nineteenth century—although Los Angeles was still a city smaller than the first Sumerian cities had been 5,000 years earlier—the same type of exhibit would have been dedicated to Mesopotamia. The glories of the Assyrian capitals had just begun to dazzle visitors to the Louvre and the British Museum, and the first American expedition had begun to uncover the great remains of Sumerian civilization in Nippur.

In the late twentieth century the logical focus for a major archaeology exhibit clearly has to be Syria. For in recent years Syria has been yielding harvests of archaeological treasures comparable in significance only to those momentous discoveries in Egypt and Iraq during the last century.

Let us use another analogy to explain the importance of the Syrian discoveries. Suppose that you were studying medieval Europe and that you knew all there was to know about Italy and Spain. Then, suddenly, you discover that an-

other major region existed in the middle of the crescent that arches its way from Gibraltar to Sicily: France! Would it not be a major discovery indeed to learn about Paris?

So it is with the Near East in the period that marks the beginning of civilization as we know it. Syria is a pivotal urban civilization, a major actor on this early stage, contemporaneous with that of southern Mesopotamia and of Egypt, and it is only recently that we have come to appreciate its impact and originality.

To emphasize this we must consider that there are at present only three major foci of early literate civilization known to archaeologists, all three in the Fertile Crescent: Sumer, Akkad, and Elam in the southeast; Syria in the north; and Egypt in the southwest. Nowhere else in the world do we have sizable and consistent evidence of the use of writing as the basic pillar of social intercourse and of personal expression as early as the third millennium B.C.

IN THE BEGINNING... Literate civilizations do not spring full-blown out of nowhere. The early prehistoric cultures of Syria stretch back into the Old Stone Age, but appropriately the exhibit Ebla to Damascus begins with the late prehistoric cultures, which provide the immediate antecedents of early city life. These early human settlements show remarkable similarities with those found else-

where in the Near East in terms of their material culture and of what we can infer from it as to their lifestyle.

The small statues from Bouqras in eastern Syria (see the hedgehog on this page) are among the most impressive early artistic achievements anywhere in the Near East. They provide the aesthetic and emotional backdrop to the later unfolding of Syria's history. There is a bold stylistic characterization of the animal world, a secure technical skill and craftsmanship that affirm a new kind of human control over nature.

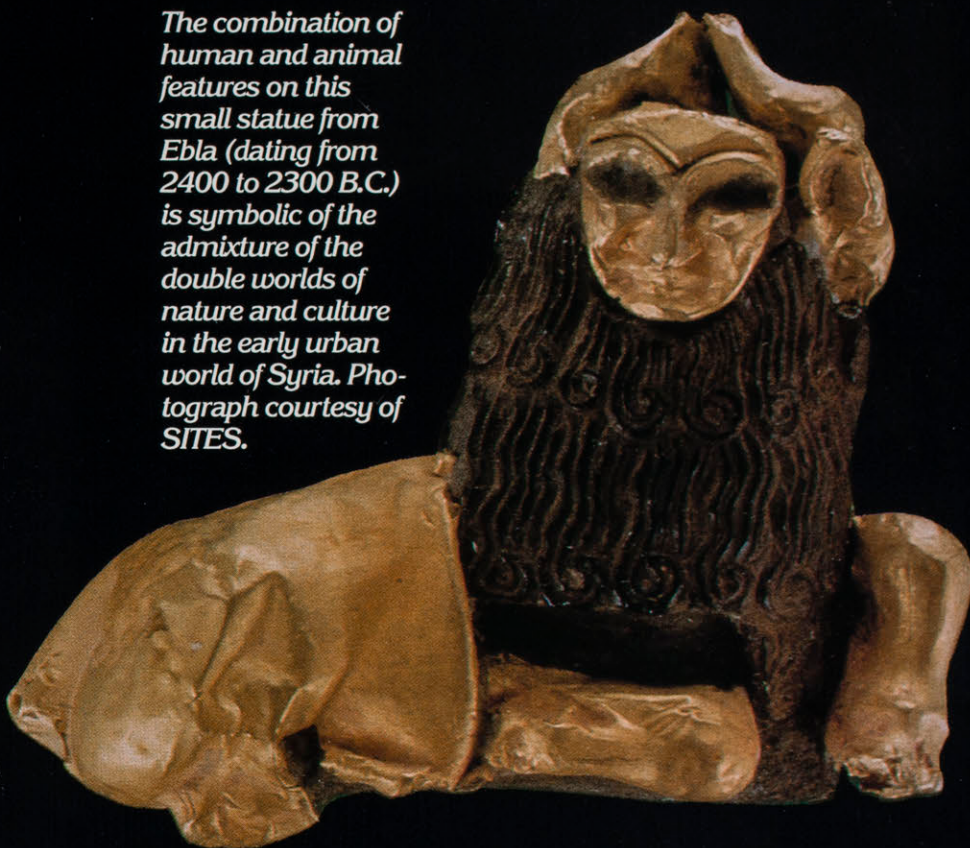
Think of it: humans had just begun to hem in their visual horizon within dark rooms, cramped inside small houses, confined in turn by narrow alleyways within settlements. Why all this crowding when the open spaces loomed large everywhere beyond the settlement? As scholars have begun to observe, it is almost a wonder not that humans "invented" city life, but that, once invented, they stuck with it!

In this light the wonderfully refined animal representations crafted by these early Syrian artists acquire a new flavor. It is almost as though they began to look at nature in a crystallized artistic embodiment much as we look at their vision under glass in our exhibit of their material culture. There is, in other words, a sharing of vision that is so typical of the human being, which is in fact the essence of culture. Think of how some of

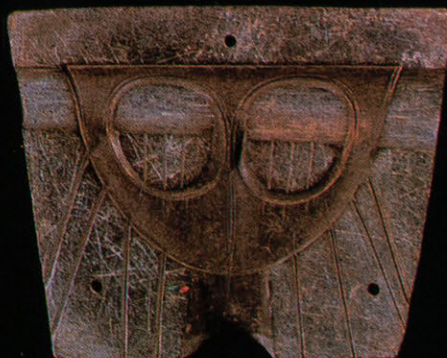


Initially a utilitarian object, the mace (ca. 1775 to 1750 B.C.) soon developed into a symbol of royal power. This mace also symbolizes the important relations Ebla had with its neighbors, in this case Egypt, where it was crafted for an obscure pharaoh (Hornedjherytet) of the Thirteenth Dynasty. Photograph courtesy of SITES.

The combination of human and animal features on this small statue from Ebla (dating from 2400 to 2300 B.C.) is symbolic of the admixture of the double worlds of nature and culture in the early urban world of Syria. Photograph courtesy of SITES.



Highly developed technology is characteristic of early urban society and of ancient Syrian civilization in particular. Besides metal technology, Syria developed a diversified technical tradition in such areas as glass manufacturing, the training of horses, and, especially, in the field of what we would call communication technology, the earliest widespread use of the alphabet. This axe mold (ca. 1850 to 1750 B.C.) is from Ebla. Photograph courtesy of SITES.



The luxurious combination of gold and lapis lazuli was one that fascinated Eblaite craftsmen. This example of a round lid (ca. 1760 to 1700 B.C.) came from a royal tomb where it probably covered a jar for precious items. Photograph courtesy of SITES.



This delicate sculpture from Mari of an eagle with the head of a lion is exquisitely carved both on the lapis lazuli body and the gold portion of the head and tail (ca. 2500 B.C.). Note particularly the emphasis on the lion's whiskers and ears. Photograph courtesy of SITES.



Emphasis on large inlaid eyes in this statue is typical for votive statues of this period (2600 to 2350 B.C.) and indicated, with the reverently folded hands, the praying attitude of the figure. These statues were set up in the temple at Mari to pray for the life of the donor and his king. Photograph courtesy of the Denver Museum of Natural History.

Ebla to Damascus is not just a tale of two cities, but a tale of an ancient culture symbolized by two major and distinctive cities at the two ends of the chronological spectrum.



the most glorious Renaissance landscape painting (Giorgione, for instance) coincides with the building up again of cities in Europe after their breakdown during the Middle Ages: it is as if human imagination took on its own embodiment in artistic expression and offered itself up almost as a counterpart to the experience of nature.

THE DISCOVERY OF EBLA. No matter how cramped the early urban spaces were, it became the new standard of living. For the first time in human history we have the dichotomy between urban and rural landscapes—both molded by human initiative and closely bonded by a mutual relationship. Syria offers the richest diversity of such landscapes: from the coastal regions of the Mediterranean to the desert; from the river basins that allow large-scale irrigation projects to the steppe with its localized water sources such as wells and springs; from the plains that support rain-fed farming to the mountains rich in timber.

In the fertile and very colorful setting of the gently rolling hills south of Aleppo, Tell Mardikh is one of Syria's largest tells, which are ancient mounds that are composed of remains of successive settlements. In spite of its size and its favored geographical location, the tell had long been ignored by archaeologists until... well, for once a great archaeological discovery was not the result of an accidental stroke of luck by some unsuspecting nonarchaeologist. The dis-

covery of Ebla—such is the ancient name, which we know from documents found during the excavations, of the city buried at Tell Mardikh—was the result of a well-laid-out scientific research project.

Paolo Matthiae, in the mid-1960s a very young archaeologist at the University of Rome, had been focusing on the significance of early Syria, a significance that had, one must say frankly in retrospect, escaped the attention of archaeologists and historians alike. This is so true that even after Mardikh first began to yield archaeological results of the first magnitude, scholarly appreciation of the fact remained scarce; it was only the recovery of the archives that finally broke the impasse and suddenly brought Ebla, and with it third-millennium urban Syria, to the limelight. It took Matthiae and his staff ten years of work before he had the satisfaction of such general recognition on the part of his colleagues and the public. He had laid down the hypothesis that ancient Syria was a major civilization parallel to the Mesopotamian and the Egyptian and set out to work at Mardikh to prove it. When it turned out that Mardikh was Ebla, Matthiae could claim to have done for Syria what Austen Henry Layard's Nineveh had done for Assyria and Leonard Woolley's Ur for Sumer.

THE ANCIENT URBAN CULTURE OF SYRIA. The exhibit Ebla to Damascus documents the incredible new vista

Ebla opened for us. On display are cuneiform tablets discovered at Ebla; these are a closed book to all but the most experienced epigraphists—nonetheless, they hold a fascination for even the most casual of viewers. Whether it is the aesthetic quality of their calligraphy or our awed awareness of their age and content, we can almost sense here the pulse of history. The silence of an age heretofore unknown is suddenly broken by the roar of an avalanche of new information. We learn about taxes and contracts, about men and women, about trade and goods. And we learn—about learning: the first known dictionaries anywhere were found at Ebla, and they show us the care the ancient scribes took in preserving the key for the understanding of the languages they either spoke or wrote.

The particular significance of the Ebla lexical tablets is that they presuppose that the scribes themselves needed these texts as reference tools. They wrote down the equivalents between Sumerian terms and their own language, which we call Eblaite. This is, in effect, the language of ancient urban Syria because it was obviously spoken not just at Ebla but also in the other cities. It is a Semitic language, closely related to the Akkadian of its time but with many special features of its own.

The art of Ebla also gives us a view of its people. This is possible because much of its sculpture and cylinder seal designs focus on human aspects, from the ele-



gant hair pieces fashioned in stone to the gold human-headed bull (see page 7). Notice also the extreme refinement of the pieces: a great stylistic mastery is apparent in the craftsmanship with which the diverse parts are unified into the harmonious, finished piece.

THE RURAL CULTURE OF ANCIENT SYRIA: THE AMORITES.

The reason we assume that Eblaite was the language of urban Syria is that we know of another Syrian language, Amorite, that was spoken in the countryside. This rural language was not written down (rural societies are less literate or not literate at all), but it has been preserved through a wealth of proper names dating back to the same time as Ebla. These names are for the most part complete sentences or noun phrases and as such they allow us to reconstruct practically the entire grammar of the language. The names are recorded in the documents of the urban archives at Ebla, Mari, and elsewhere, and in this way too the ancient city becomes a window to the larger landscape of Syria as a whole, not only urban Syria.

There is one aspect of the ancient Syrian rural landscape that makes it very special and that correspondingly sets it apart from the Sumerian south: the steppe on either side of the Euphrates, while too high for irrigation, is dotted with wells and springs, which made it possible for the rural population of the

kingdom to take their flocks over great distances, grazing on the light green cover of the winter steppe, and relying on the widespread system of water sources.

As a result of this mobility, the peasants of ancient Syria enjoyed a certain autonomy from the city that their Sumerian counterparts did not; their pastures in the steppe were too broadly scattered and generally too unimportant (except precisely as pastureland) to be closely controlled by the urban power structures. Thus they developed a degree of political leverage that was not enjoyed by other peasants in the rest of the Near East. The texts of Mari give us especially wonderful insights into this unique strand of ancient Syrian society. Among the most interesting tablets from the royal archives of Mari are letters exchanged between the palace in the capital and the provincial administration in a number of towns and cities scattered along the river dealing most often with their relations with the Amorites.

So independent were the Amorites, in fact, that from their ranks rose certain individuals and families that retained their sense of Amorite origin at least in the names that they used for themselves. These are the Amorite dynasties, which extended from Syria to the southeast and of which Mari offers one of the most brilliant examples.

THE SECOND URBAN CULTURE OF ANCIENT SYRIA: MARI. Next to Ebla, Mari stands out as the most important Syrian city of the early periods. The statues, the gold, and the frescoes of Mari, well represented in the exhibit, give a good idea of the opulence not only of this ancient capital of eastern Syria but also more generally of the sophistication of this most ancient Syrian culture. These artifacts are somewhat closer to the Mesopotamian tradition of the Sumerian south. In recognition of this similarity, Mari has the unique honor of being the northwesternmost city to be mentioned in the venerable Sumerian kinglist as the seat of a "canonical" Sumerian dynasty.

One difference, noticeable especially in the statuary, is the emphasis on the humanity of the individuals portrayed. The sculptors accentuated certain physical characteristics that indicate wealth and prosperity: we meet here with the same fat-cheeked, double-chinned individuals we see in sculptures of first-millennium Assyrians who wished to have themselves portrayed with the same indications of abundance.

Mari continued to play a major role into the early second millennium as one of the great capitals of the time. The great royal archive of Mari dates to this period, and it is written in pure Akkadian (Akkadian was one of the earliest Semitic languages of Mesopotamia), ex-

cept for minor variations. This gives evidence of a second major urban tradition of Syria, one that is more closely linked to the south and of which Mari gives the best documentation. This is somewhat later than the major period of Ebla, and it shows a considerable cultural unity from the west of Syria to southern Mesopotamia: we refer to its regional scope as Syro-Mesopotamian and to the period as that of the Amorite dynasties.

The unity expressed by this term is not to be understood as "Mesopotamian with a Syrian appendage." It is quite the opposite, as intimated by the term "Amorite dynasties" current in modern historiography. The Amorites were rural classes of Syria, out of which several clans and individuals rose to power in the urban states not only of Syria but also of the Mesopotamian south. It was generally acknowledged by its contemporaries, including the Babylonians themselves, that the greatest power of the times was in the western regions of Syria—the kingdom of Aleppo, which had by then overshadowed Ebla. Ancient Aleppo—one of the most tantalizing sites of the entire Near East—is absent from the exhibit because it remains to be excavated.

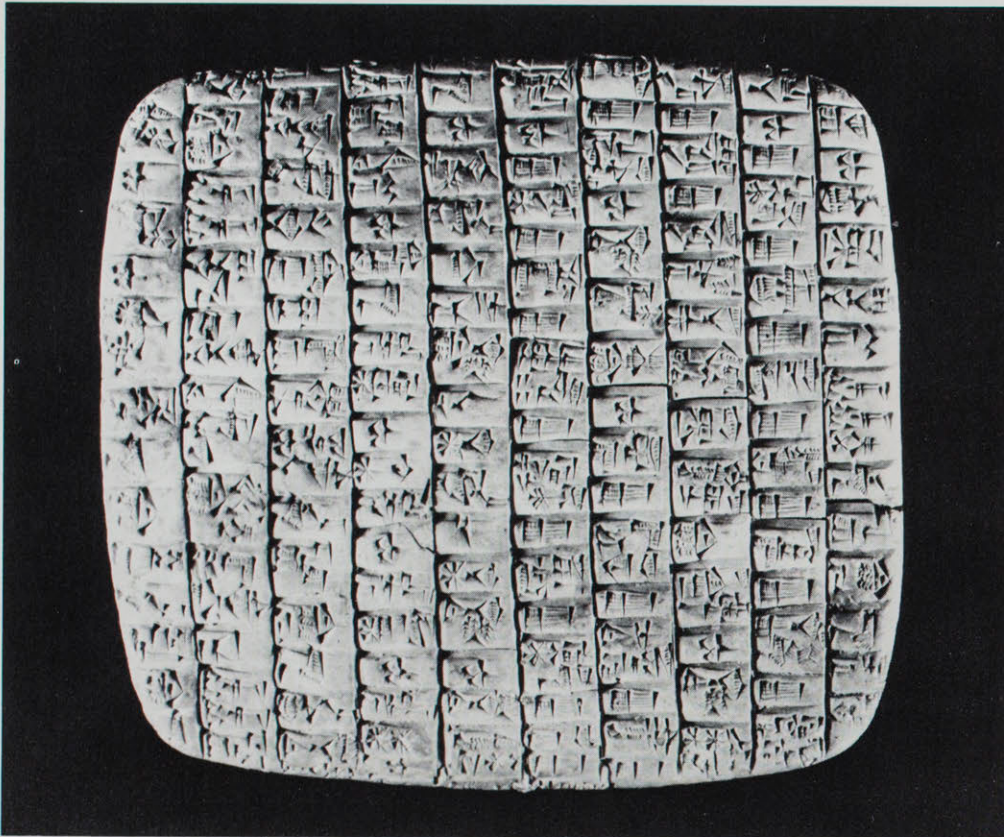
SEARCHING FOR A THIRD URBAN CULTURE OF ANCIENT SYRIA: THE HURRIANS. Ebla and Mari are two signposts in the historical development

of the ancient Near East as a whole. They also delimit the area where a major new frontier of Syrian—and, in fact, ancient Near Eastern—archaeology is being explored in our own time: the Hurrian civilization in the northeast. Two major sites from this region and period have been known for some time—Chuera and Brak.

More than a dozen major excavations are currently underway in the region, one of the common interests being the search for some city that might be for the Hurrians what Ebla has been for the Semitic urban civilization of ancient Syria. Our own excavations at Mozan in this region have pointed to a city that may well be the largest in the Khabur region. It is extremely uniform in its depositional history: circumstantial evidence suggests that it may correspond to the site of ancient Urkish, the major Hurrian city in the third millennium, and if so, much indeed can be expected from the site.

The historical reason behind the rise to power of the Hurrians is their control of the piedmont area: it is from here that the natural resources of the mountain ranges in the north came to supply the needs of the new urban civilization. The material evidence of Hurrian cities was probably much like that of western Syria or of the Mesopotamian south, since they all shared in a rather uniform pattern of urban culture: that is why we

Aleppo is one of the most intriguing sites of the ancient Near East—but very hard to excavate because it was built up in the Middle Ages as a formidable defensive citadel. At the time of Hammu-rapi of Babylon, Aleppo was acknowledged by its contemporaries as the most powerful kingdom of southwestern Asia. Syria is one of the richest archaeological grounds anywhere: it boasts a number of major capitals of the ancient world, many of which remain to be excavated. Photograph by James L. Stanfield, National Geographic Society.



The large documents from the royal archives of Ebla belong to one of the oldest collections of written texts anywhere in the world. This particular text (2350 to 2300 B.C.) is a large ledger that includes summaries of a number of administrative transactions. Some of the earliest library texts known to date also come from Ebla and western Syria. Photograph courtesy of SITES.

cannot identify any Hurrian city or Hurrian artifactual style from the excavations in what is most likely Hurrian territory (much as in the case of western Syria before the discovery of the archives of Ebla). It is only from their language, which we know from tantalizingly few and important bits of evidence, that we can postulate a Hurrian urban sphere. So the search for Hurrian cities means a search for Hurrian archives. The earliest known Hurrian text, dating to a period still in the third millennium, only slightly later than Ebla, was found on the surface in the area of Mozan, and that is one reason why excavations there are so full of promise.

SYRO-MESOPOTAMIAN EQUILIBRIUM. The large territorial states governed by Amorite dynasties had developed a network of reciprocal relationships at a level of sophistication and awareness that rivals that of the contemporary international scene. The various dynasties controlled distinct geopolitical regions, all roughly equivalent in size and importance, and all closely related in material culture, sociopolitical customs, and, to some extent, ethnic affiliation.

An occasional departure from this hard-won equilibrium turned out to be but a temporary adventure: in the second half of his reign, Hammu-rapi of Babylon conquered practically all of Syro-Mesopotamia except for western Syria and assumed the historic title of King of

the Four River Banks, that is, both banks of the Tigris and Euphrates, which is the ancient way of saying "Mesopotamia." (Hammu-rapi's title is traditionally understood as meaning "king of the four quarters of the world," which seems, however, less appropriate both linguistically and historically.) But it was a short-lived phenomenon: under his successor, the various territorial states regained their independence with only some relatively small changes.

One such change affected Mari. Destroyed by Hammu-rapi in the eighteenth century B.C., Mari was not rebuilt; instead, its role as capital of the Khabur region was taken over by the city of Terqa, which for two centuries ruled the region with its own dynasty of Amorite kings. Our own excavations at this site have concentrated on the residential quarters at the periphery of the ancient city (the ancient palace is presumably under the houses of the modern town of Ashara): here we have brought to light a number of written documents that depict the various aspects of life in a middle-class setting but also give us ample insight into the unfolding of the larger issues of political history. Thus we know of some thirteen Khana kings who, ruling from Terqa, followed the dynasty of Mari whether in building canals and palaces or in waging war and administering justice. In Terqa we also found—and remember, this is outside of a palace context—artifacts attesting to Egyptian and Hittite influence.

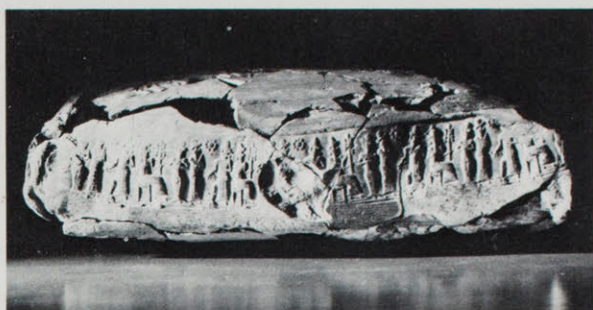
In fact, the first cuneiform tablets ever to be found on Syrian soil were found (long before our excavations) at Terqa: coming from the surface of the tell and largely bought in the antiquities market, they were mostly published between the end of the last century and the first decades of this one.

That contacts were far-flung indeed is shown by our find of a small cluster of cloves in a pantry room. Since cloves are known to have been cultivated only in the Far East (Indonesia and the Moluccas), this provides evidence for the most far-reaching trade contacts ever suspected for any ancient Near Eastern city.

Giorgio Buccellati and Marilyn Kelly-Buccellati are a husband and wife team who have worked together for many years in the Near East, especially in Syria, Iraq, and Turkey. They are at present codirectors of three expeditions operating concurrently in Syria—at Terqa, Qraya, and Mozan. They have published widely in the field of history, archaeology, art, literature, and languages of ancient Syria and Mesopotamia. Dr. Giorgio Buccellati is Professor of the Ancient Near East and of History at UCLA, and Dr. Marilyn Kelly-Buccellati is Professor of Art History and Archaeology at California State University Los Angeles.

In the next issue of Terra we will continue our exploration of the more recent history of ancient Syria by way of the exhibit Ebla to Damascus.

This tablet (about 1700 B.C.) excavated recently at Terqa has the rolling of an ancient cylinder seal on its side. The exquisite carving can still be seen in the rolling. Photograph courtesy of International Institute for Mesopotamian Area Studies.



White marble, mother-of-pearl, and lapis lazuli were used to make this face, which belonged to a statue that would have been assembled out of additional materials (2600 to 2350 B.C.). This example from Mari emphasizes the finely sculpted nose, cheeks, and mouth, which offset the large inlaid eyes. Photograph courtesy of SITES.



Seated on a carved throne, this woman wears a tufted shawl over a high polos-type hat and a tufted garment (Mari, 2600 to 2350 B.C.). These clothes were probably made from a woven material resembling sheep fleece; it is also possible that instead of being woven, the tufts were made of tassels. Photograph courtesy of SITES.

EBLA TO DAMASCUS

Ebla to Damascus: Art and Archaeology of Ancient Syria, on display at the Natural History Museum from March 15 to June 1, 1986, is an unprecedented exhibition of nearly 300 archaeological and artistic treasures from the National Museums of Syria representing 10,000 years of cultural developments. Ebla to Damascus tells a tale of this unique culture symbolized by ancient Ebla at one end of the chronological spectrum and modern Damascus at the other. This exhibit is cosponsored by Occidental Petroleum Corporation and the Los Angeles County Natural History Museum Foundation.

TICKETS

Each museum membership receives 2 free tickets to Ebla to Damascus. Additional tickets are \$4 for adults and \$1 for children (5-12) and senior citizens. Tickets purchased at the museum's Membership Office have no handling charge; there is a \$1 handling fee for each ticket order processed through the mail and a \$1 service charge for each purchased ticket. Tickets may also be obtained through Ticketmaster outlets at the May Company or Music Plus or charged by phone. Tickets entitle holders to visit all museum exhibits. Special exhibit hours are 10 to 5 Tuesday through Thursday, 10 to 8 on Friday, and 10 to 6 on Saturday and Sunday. The museum is closed on Mondays. Entrance to the exhibit will be through the East (Rose Garden) doors.

This beautiful goddess was set up at the entrance to the important ceremonial rooms of the Mari palace (1800 to 1750 B.C.). Note the lightly carved fish swimming in the flowing streams depicted on her skirt. Photograph courtesy of SITES.



Among the many statues found in the temples at Mari, this statuette (2500 to 2340 B.C.) shows us a good example of contemporary dress. The woman's high polos-type hat and long capelike robe draped over one shoulder are also seen on other examples from this period. Photograph courtesy of SITES.



We know that music played an important role in the life and culture of the ancients partly from representations of musicians as in this statue but also from more direct evidence: the Syrian city of Ugarit has provided the first musical score known anywhere in the world (it dates to about 1400 B.C.), and it is written in cuneiform on a clay tablet. This seated figure of the singer Ur-Nanshe comes from Mari (2600 to 2350 B.C.). Photograph courtesy of the Denver Museum of Natural History.

PRESERVING IMAGES FROM THE PAST

by JOHN CAHOON



Mayflower Doughnut Shop in 1938,
located at 8th and Broadway in
Los Angeles.

THE BEACH AT VENICE, CALIFORNIA, IN THE 1920s, looking NORTH TOWARD THE PIKE, A NOW-DEMOLISHED MIDWAY.



PAGE 17, BOTTOM: This print of bathers on the beach shows how the NITRATE NEGATIVE HAS BEGUN TO BREAK DOWN.

The historical photographs and negatives housed in the museum's Seaver Center for Western History Research are an important resource for researchers studying the development of Los Angeles, southern California, and the West. Containing more than 200,000 images of historical and artistic value, these collections also reflect developments in the photographic process from early daguerreotypes to modern acetate negatives.

The plastic film base was introduced in the late 1880s as an improvement over the glass plate negative. One of these plastics, cellulose nitrate, came to be used as the main support for photo-

graphic emulsions because of its strength and clarity, first in roll film and in 1913 for the sheet film used in large format cameras.

The problem with nitrate film is that it is unstable. As the film ages, gases are emitted that, when combined with moisture in the air, form acids that destroy the photographic emulsion. The image fades; the negative dissolves into a sticky mass; it adheres to adjacent negatives and eventually turns to a dry brownish powder. The disintegrating nitrates give off gases that promote a similar breakdown in surrounding negatives, further contributing to the problem. Nitrate film, which burns sixteen times faster

than wood under the same conditions, is also a significant fire hazard. Due to these problems, nitrate began to be replaced with the more stable "safety" film in the 1930s and 1940s.

Today nitrate film is no longer used in photography. However, the problems of nitrate film still exist for many libraries and archives that have old negatives in their collections. Because there is no way to reverse the deterioration, copies must be made of the images. Many have already been lost either because there were no funds available for photo conservation or because the institution did not realize the unstable nature of the negatives. It is a race against time to do the



This early view of Westwood Village shows the intersection of Le Conte Avenue and Westwood Boulevard in 1930.



copy work before more of these wonderful pictures from our past are gone forever.

The Seaver Center for Western History Research at the Natural History Museum recently received a grant from the National Endowment for the Arts to begin a preservation program for the nitrates in our collection. The grant provided funds for the hiring of a photographer to make prints and duplicate negatives as well as to purchase paper, film, and chemicals to do the work.

A multiple-step process was necessary to select the images to preserve because the size of the NEA grant was not suffi-

cient to cover preservation of all the nitrates in the collection. The initial step was to examine some ten thousand of the nitrate negatives for subject content and image quality. Approximately five thousand of these were then selected for printing on archival quality paper, providing researchers with better access to the collection. Finally, 2,800 of these were chosen to be duplicated on negative film.

The negatives are copied on Kodak SO-015 direct duplicating film in a one-step process that eliminates the need to make a positive. This procedure has been re-

financed by Larry Booth of the San Diego Historical Society, a nationally recognized authority on photographic preservation, who conferred with the project photographer José Sánchez.

While the photographer made duplicate negatives, the museum support staff prepared acid-free envelopes to receive the copy negatives and study prints, transferring the descriptive information from the old negative sleeves. Finally, the completed duplicates and prints were put into acid-free storage boxes in the newly refurbished Historic Records Center, where temperature and humid-

ity controls and an air-filtration system will help prolong the life of the photographic collections and of all the historical materials housed there.

This preservation project is an important first step in an organized program to save these unique images, some of which have never before been printed. As additional funds become available, the work will continue.

John Cahoon is Curatorial Assistant in the Historic Records Section of the History Division. He authored the NEA grant that is funding this nitrate conversion project.

EVANGELIST AIMEE SEMPLE MCPHERSON DURING HER RECOVERY AT HOME AFTER HER MYSTERIOUS DISAPPEARANCE IN 1926.



Expressions of Cameroon Art

THE FRANKLIN COLLECTION

Photographs by
John Thomson



Royal Memorial Ancestor Figures (Bamileke people, Bangwa kingdom; wood, nineteenth century). The figure of the Royal Titled Wife and Priestess of the Earth Cult (left) rendered with the valued attributes of sexual and social maturity, carries the basketry rattle used by the leader in the dance of the earth and displays the symbols of her status as a royal titled wife: representations of collars of glass beads, a necklace of carved leopard teeth, a beaded loin string, and ivory armbands and anklets carved in wood. Popularly known as the Bangwa "Queen," this statue is one of the most acclaimed and valued pieces of African art. The regalia carved in wood on the male figure (above) — the prestige cap, bead collar, necklace of carved leopard teeth, ivory armbands, leopard-skin anklets, and calabash — are reserved for kings and typically characterize royal memorial figures. The dynamic posture and vibrant expression of this figure, together with the consistent style characteristics, unequivocally confirm this statue as the male partner of the Bangwa "Queen."

The art of the Cameroon encompasses the rich and diverse cultural traditions found within the boundaries of the West African nation. As in all African art, that of Cameroon is closely linked to the historic and social contexts of its various peoples.

Cameroon's major artistic traditions originate in the Grassfields, a high savanna plateau located in the north-western corner of the country. Grassfields art has its roots in a cultural system in which kings and their governments guard and guide the well-being of their people. As such, most of Grassfields art is an art of royalty, status, and wealth. Its themes of royal authority and social prestige are carried out in a profusion of symbolic forms. Throughout the Grassfields artists have used a repertoire of animal icons with varying emphasis but with a consistent order of ranking. For example, the leopard is preeminent; it is a symbol of power and leadership and is the royal alter ego. The elephant is a symbol of might and majesty; ivory trumpets, tusks as footrests, ivory armlets and staff finials denote royalty. The crocodile and the lizard are also royal symbols, as is the buffalo.

Carved human figures—frequently paired as male and female—are a characteristic feature of Grassfields art. Such figures are memorials to royalty or representations of important family (lineage) heads and title-holders, as well as loyal retainers to the king. Royal memorial figures include representations of Fons (kings), their titled wives, and queen mothers. These statues typically display the regalia of Fonship and serve as a historic record of the dynastic succession. They are the paramount symbols together with royal stools of kingship and as such are displayed in the presence of the Fon during the kingdom's most important ceremonies. All memorial figures are symbols of the prevailing hierarchic social order and an affirmation of the dominant cultural values of kingship, female reproductive and productive capabilities (seen in the female figures), and loyalty to the Fon (seen in the retainer figures).

Grassfields art testifies to the vitality and creativity of its makers. Its versatility is characterized by bold dimensions of size and visual concept rendered in styles ranging from uninhibited dynamism and impulsive exuberance to static repose and serenity. It is an art that elicits strong responses from Cameroonians and Westerners alike.

Expressions of Cameroon Art, at the Natural History Museum's Director's Gallery through May 25, 1986, displays objects from the collection of Valerie Franklin. Twenty-seven of the pieces toured with the Smithsonian Institution's traveling exhibition, The Art of Cameroon; the remaining forty-nine pieces are on public exhibition for the first time.



Prestige Stool (attributed to Western Grassfields: Babanki style; wood, nineteenth century). The focus of a Grassfield kingdom's art is the palace; from the architecture itself to the drinking horns, pipes, ivory trumpets, jewelry, and food vessels, palace art proclaims the wealth and vitality of the Fon and his kingdom. The stool is the foremost prestige object as symbol of royal office; the stool explicitly upholds the Fon's authority and is his seat during audiences with his subjects, at public ceremonies, or during formal receptions for visiting Fons and dignitaries.

Valerie Franklin's parents, Harry and Ruth Franklin, began collecting African art in 1938. In the 1930s few people that were not artists or students of other cultures knew what African art was or even that so-called primitive peoples had long traditions of making finely crafted pieces of religious, social, and functional purposes. Her parents were pioneers and became deeply involved long before it was the fashionable thing to do.

In 1966 a now-famous auction took place in New York of the Helena Rubenstein collection of African art. The Bangwa "Queen" was being offered for sale; the Franklins recognized the greatness and uniqueness of this figure and were determined to acquire it. The Queen brought the highest price ever paid to date for a wooden sculpture. Shortly after the Queen had been acquired, a collector in Europe wrote the Franklins to say that he had the mate, the "King." He had acquired both pieces after they had been deaccessioned from the Berlin Museum of Ethnology in the early part of this century, after which they became separated. The Franklins purchased the figure, and, after over forty years of separation, the Bangwa Queen and King were once again reunited.

Said Ms. Franklin of her family's collection:

The richness and depth of these figures and all of our Cameroon collection has provided us with endless hours of pleasure and fascination with the imagination and skill of the Cameroon artist as well as the cultural rhythms and the combination of strength and beauty achieved in the Cameroon aesthetic. It is my pleasure to share this collection with the people of Los Angeles—to share the beauty, the power, and the artistic manifestation of the traditional culture of the Cameroon. Each of us is made richer through understanding other peoples and other cultures and other approaches to human existence.

This article is drawn from the label copy for Expressions of Cameroon Art and The Art of Cameroon by Tamara Northern (Senior Curator of Ethnographic Art at the Hood Museum of Art at Dartmouth College) and information provided by Valerie Franklin. The Art of Cameroon is the catalog accompanying the Smithsonian Institution Traveling Exhibit Service show of the same name and is available in the Natural History Museum Book Shop.

THE FOSSIL BOY

"What do you make of that?" asked Kamoya Kimeu. Nestling in his outstretched palm was a small fragment of fossilized human skull, no larger than a fifty-cent piece. It took only a few seconds to confirm that the piece could indeed be part of a fossil human skull. Calling for the rest of our team to join us, we made our way swiftly across the two hundred yards of dry riverbed that separated our camp from the exposures in which Kamoya had spotted the small fragment of bone. The cairn that he had left to mark the position of the fossil lay on the slope of a low hill and in the middle of a goat track leading down toward the sand river. One could scarcely imagine a more unprepossessing site for a momentous discovery.

During the course of the next hour, careful scanning of the surface soil adjacent to the cairn revealed another, smaller, skull fragment, an abraded fossilized zebra tooth, and the tip of the tusk of an extinct pygmy hippopotamus. Not exactly a bonanza, but then you do not expect to find a human fossil, however incomplete, every day. The spot was carefully located on an aerial photograph and the circumstances of the find documented in the field notebook. We made our way slowly back to camp and, it being the allotted hour, made a celebratory pot of tea.

Relaxing and sipping his tea, Kamoya was quietly content. Curator of Inland Monuments and Sites at the National Museum of Kenya in Nairobi, Kamoya Kimeu is perhaps more widely known as the leader of the "Hominid Crew" that has, over the past sixteen years, been instrumental in the discovery of nearly two hundred human fossils at Koobi Fora on the eastern side of Lake Turkana. Though working happily together as a team, the sense of competition among its members as to who would find the first hominid (= human) fossil of the season in this new area was intense. Kamoya's discovery had maintained his reputation for success in this endeavor.

Our presence on the western side of Lake Turkana was an outgrowth of the long-term multinational Koobi Fora Research Project. After working for twelve years on the eastern side of the lake (see *Terra*, Spring 1982), Richard Leakey, Director of the National Museums of Kenya, decided it was time to explore farther afield and in the winter of 1980 sent the hominid crew to prospect in

NEW *HOMO* *ERECTUS* SKELETON FROM WEST OF LAKE TURKANA, KENYA

by JOHN M. HARRIS



Lake Turkana, Kenya. The Nariokotome River, which is near the site of the Homo erectus find, can be found at the upper left. The 1984 expedition was working in the area between the western margin of the lake and the mountains to the west. Map courtesy of National Geographic Research.

what appeared to be promising ancient river and lake sediments on the opposite side of the lake. These were indeed fossiliferous and, during the summer of 1981, Richard arranged for Dr. Frank Brown (Professor of Geology at the University of Utah) and myself to accompany Kamoya and his team on a short second reconnaissance of the new area. We were shown exciting new exposures that contained fossils and artifacts, and we returned the following year to decipher the geology and explore for additional sites. We could not start collecting the fossils at that time because we did not have the necessary aerial photographs on which to record the localities where the fossils occurred. However, with the assistance of the Kenyan armed forces, the necessary photographic coverage was obtained during the winter of 1983. Thus, in the summer of 1984, an expedition sponsored by the National Geographic Society and the Government of Kenya, and comprising Dr. Alan Walker (Professor of Anatomy at Johns Hopkins University), Richard Leakey, Frank Brown, myself, and Kamoya Kimeu and his crew, was mounted to search for the remains of early man near the northwestern shore of Lake Turkana. Frank, Kamoya and his crew, and I set out from Nairobi toward the end of July and established a base camp on the north bank of the Laga Nariokotome, a sand river from which we could obtain water by digging shallow wells. Richard and Alan were due to join us after a couple of weeks or so.

We had determined from our reconnaissance trips that the older and more richly fossiliferous exposures lay in the southern part of the 800 square kilometers that we were to investigate. Accordingly, we started off in the north, near where Kenya borders Ethiopia and Sudan, with the aim of gradually working our way toward the "best" localities. We had only reached the halfway point at the time of Kamoya's discovery, and, as it turned out, most of the rest of the field season was spent in the vicinity of that site. The richly fossiliferous older sites still farther to the south had to be left to another season.

We had spent the previous five days on safari prospecting for fossils in the northernmost part of our area, close to the border with Sudan. Returning to the comparative luxury of our base camp, almost directly across the lake from the base camp at Koobi Fora, we declared the following day a rest day; my time was spent duly cataloging all the fossils we

had collected on that safari, and the rest of the men spent the day doing the laundry and other camp chores. Bored with all this domestic activity, Kamoya wandered out of camp to see what he might find close by—with the exciting but totally unexpected result described earlier.

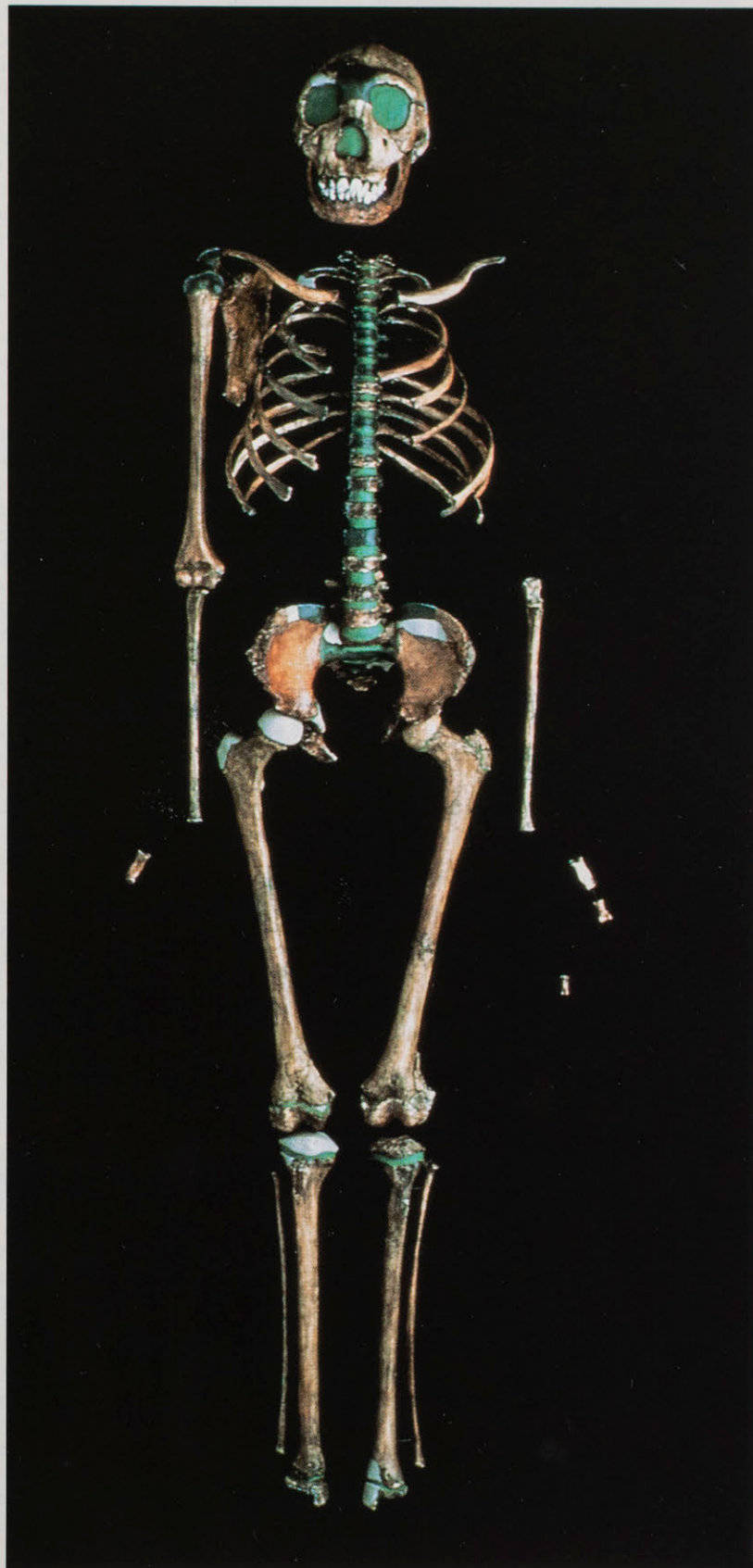
A few days later we were joined by Richard Leakey and Alan Walker. A test excavation was begun at Kamoya's site. Rocks and the larger stones were removed from the surface of the soil, and the soil was brushed off and sifted in the hope of finding a few more skull fragments. Very few excavations undertaken at hominid sites on the other side of the lake had produced significant results, and this excavation was begun more for the record than in anticipation of finding the rest of the skull. The location of the discovery—in the middle of a goat track—suggested that even if the specimen had been more complete at the time of its preservation, generations of goats trampling on it would probably have pulverized the remains. After starting at the bottom of the hill, an hour or so's activity had failed to produce any further pieces, and the prospects did not look promising. But suddenly first one and then more fragments of skull were revealed in the loose soil overlaying the bedrock, and the excitement began to mount. It was not easy at first sight to distinguish pieces of dark, dust-covered skull from broken lava pebbles, so the camp shower was pressed into action to wash anything that was not obviously bone. As the collection of fragments grew and some of them could be fitted together, speculation mounted as to the possible completeness of the find.

After hours of patient work, the soil cover was eventually entirely removed and there, laying in the hard sandy silt of the bedrock, was the palate, with a small *Acacia* tree growing through it. As the excavation continued into the hillside an additional bonus materialized—a fossil human rib. Then part of the pelvis, a fragment of shoulder blade, a portion of a vertebra. For the first time someone gave tongue to the thought that none of us had dared voice before. Perhaps the rest of the skeleton lay concealed in the rock.

It became clear as the skull pieces were put back together that it belonged to the species *Homo erectus*. This is the species recognized by most authorities as immediately ancestral to our own, *Homo sapiens*, and the first human species to develop a complex stone technology, to harness fire, and to migrate out of Africa, the cradle of humanity. Recorded from many other sites in Africa and Asia, *Homo erectus* had been known from skulls, jaws, and teeth, but only a few bones of the skeleton could be confidently assigned to this species. One partially complete skeleton had been discovered across the lake at Koobi Fora, but that particular individual had suf-



(Page 22, top) Kamoya Kimeu, leader of the Hominid Crew, the famed fossil-hunting team of the National Museums of Kenya, digs for more pieces of the *Homo erectus* skeleton. (Page 22, bottom) Alan Walker examines the new skeleton at the National Museum of Kenya, Nairobi. (Below) This assemblage of the *Homo erectus* skeleton includes material found by the second expedition to the west side of Lake Turkana in summer 1985: all the missing teeth, the ulna from each forearm, additional ribs, a vertebra, and hand and foot bones. Photographs by David L. Brill, © National Geographic Society.



ferred from a disease (Hypervitaminosis A, perhaps contracted by eating too much raw liver) with resultant deformity in many of the bones. The importance of the new specimen was that any skeletal material associated with the skull could be positively identified and then used to help recognize other possible *Homo erectus* bones found elsewhere in the world.

The excavation continued slowly for the next three weeks. Delight at the unearthing of each new piece was accompanied by Alan's recurrent litany: "This is the first thoracic vertebra of *Homo erectus* known to science, this is the first lumbar vertebra of *Homo erectus* known to science...." Members of the team took turns in the exciting part, working three or four abreast in the narrow excavation area, and in the more mundane but equally important sieving activity—triumphant on the rare occasions when they discovered small fragments of bone in the sieves that had been overlooked by their colleagues in the "glamour spot" at the "pit face." Small children from the local village viewed the operation from the safety of their perches in nearby *Salvadora* bushes, cramming their mouths with the plant's astringent berries. Their elder sisters strode disdainfully by as they escorted their goats and camels to watering holes dug into the surface of the sand river. More enterprising schoolboys from a nearby elementary school spent their weekends carrying basins full of excavated matrix to the sieving site for the princely sum of five shillings a day (50 cents) and all they could eat. Staff from several of the missions dotted along the lake edge dropped by to view the progress, as did one elderly Turkana man who nearly caused mass apoplexy in the ranks when he prodded a freshly unearthed limb bone with his walking stick and demanded to know what we thought we were playing at!

Not temperamentally suited for the painstakingly slow, deliberately patient activity in the hole in the ground, even with periodic pauses for fresh-brewed coffee, I continued prospecting for additional fossil localities in the northern half of the area. It was important to learn what other animals were living in the region at the same time as our hominid so that we could eventually reconstruct the habitat and environment of which the fossil human was part. I took with me those men that could be spared from the daily excavation activities or joined Frank Brown on his geologic traverses of the region. We added slowly, sometimes spectacularly, to the samples collected when working as a full team and had other exciting moments as well—such as the discovery of dinosaurs in older rocks to the west of our area—but that is another story.

At the end of four painstaking weeks,

***Homo erectus*
was the first human
species to develop a
complex stone tech-
nology, to harness
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out of Africa, the
cradle of humanity.**

the excavation extended some thirty feet into the hillside, its progress documented for posterity by *National Geographic* photographer David Brill. The "haul" was spectacularly complete. Of the skeleton, only the left arm, the right forearm, and the foot bones were still missing. Perhaps these remain to be discovered farther into the hillside when the excavation resumes. As funding ran low, and other commitments pressed, the excavation came to a halt. The site was carefully covered over, to be reopened the following summer or whenever further funding materialized. The bones were carefully wrapped in toilet paper and flown back to the National Museum in Nairobi for cleaning and further study.

What then may we say at this juncture about a discovery heralded as the most complete remains of an early human ancestor ever discovered? We know from the shape of its skull that it does indeed belong to the species *Homo erectus*. We can tell from its teeth, and from the incompletely fused limb and skull bones, that this was a child 12 to 13 years old. From its pelvis we can determine that it was a male. From the size of its leg bones this young lad would have stood about 5 feet 6 inches tall; had he lived to maturity he might have been 6 feet tall—much taller than we would have anticipated for an early human ancestor. Some obvious differences between the skeleton of this fossil boy and that of his modern counterpart are already apparent. The spines on his vertebrae are oriented in a slightly different direction. The neck of his femur, that part where the thigh bone articulates with the pelvis, is somewhat longer. Other differences may be revealed as the remaining bones are cleaned and studied, and these may help us better understand the anatomy and behavior of the species ancestral to our own.

The bones of the skeleton were preserved in silty clay that lay immediately on top of volcanic ash or tuff erupted from volcanoes making up the Ethiopian Highlands. Both the shape of the volcanic glass fragments in the ash and their chemical composition have enabled Frank Brown to correlate the ash with one of the tuffs exposed at Koobi Fora that is dated at almost 1.6 million years before present. Thus we know the boy died about 1.6 million years ago. Why he died we do not know. There are so far no obvious signs of disease or of any breakage consistent with an accident or murder. There are not even any signs that the bones were chewed by the numerous types of scavengers that we know must have been present in the area at the time of his death. The silty clay in which the

skeleton was enclosed was probably deposited in a swamp, an interpretation supported by the catfish bones and snail shells that were also recovered during the excavation. The boy died in the swamp, his flesh decayed, his bones became disarticulated and were washed into a long line by the action of a small stream. The orientation of the bones within the sediment, and a large hoof-shaped depression in one of the shoulder blades, suggest that the skeleton was trampled by other animals passing through the vicinity.

The specimen has been catalogued into the collections of the National Museum of Kenya as KNM-WT 15000. As Richard Leakey and Alan Walker have written in a paper announcing the discovery in *Nature*, this skeleton has already shown that our views of early *Homo erectus* morphology will have to be modified. With the possibility of finding more parts when the excavation is resumed, and after further detailed analysis, KNM-WT 15000 will provide a firm foundation for identifying and interpreting isolated parts of *Homo erectus* skeletons and early hominid growth patterns. Except for those representing the latest stages of our evolution, it is also the first fossil human in which brain and body size may be accurately measured on the same individual. These two crucial variables, on which so much speculation about human origins and behavior has been based, can now be determined for at least one early hominid individual.

For security and safety reasons, the bones of KNM-WT 15000 will remain in the thick-walled concrete vault at the National Museum of Kenya in Nairobi. Casts of the skull of this individual were prepared at the end of the 1984 season and one has been on display at the Natural History Museum of Los Angeles County. Casts of the rest of the skeleton will eventually be prepared and displayed here so that we may all marvel at the accident of fate that preserved so well the ancient remains of this young lad for posterity.

POSTSCRIPT

This article, written shortly after the discovery of the *Homo erectus* skeleton, was intended for publication in *Terra* in July 1985. However, to comply with the

terms and conditions of the grant received from the National Geographic Society, it was necessary to defer publication until now.

Meanwhile, a second expedition to the west side of Lake Turkana took place in summer 1985. Excavation continued at the Nariokotome site and additional material was duly recovered, including all the teeth that were previously missing from the skull, the ulna from each forearm, additional ribs and vertebrae, and a few bones from the hands and feet. The position and orientation of the newly recovered material refuted the original interpretation that the skeleton may have been scattered by stream action as it disarticulated. The post mortem history of the skeleton is still being investigated.

Those participants in the expedition not involved in the Nariokotome excavation were able to begin collecting from the older and more richly fossiliferous localities in the southern part of the region on which our sights had been set the previous season. These proved as exciting and as fossiliferous as we had anticipated, with significant results that will be reported in due course. I paid a second and more lengthy visit to the dinosaur localities and, although only part of the area was thoroughly prospected, abundant remains of at least seven types of dinosaurs were observed. These too will be reported on at some time in the future.

Kamoya Kimeu, the discoverer of the *Homo erectus* skeleton, was awarded the John Oliver La Gorce medal of the National Geographic Society for this and his other many contributions to our understanding of human origins. He received his gold medal from President Reagan toward the end of October 1985 and thereafter visited his many friends at various institutions around the United States. His last port of call was Los Angeles, where he spent several days with me before traveling to London to meet the Queen and the Duke of Edinburgh, another former recipient of the La Gorce medal.

Further fieldwork west of Lake Turkana will take place in summer 1986, when it is hoped that the rest of the skeleton will be recovered. Its importance now firmly established, only time and continued effort will tell what other fascinating discoveries remain to be made in this remote desert location.

Dr. John M. Harris is the Chief Curator of the museum's Division of Earth Sciences. He has participated in the field programs of the Koobi Fora Research Project and National Museums of Kenya since 1968. In January 1986 he received the Outstanding Contribution to Science award from the Los Angeles County Board of Supervisors.

MOREL CUISINE

AND THE FEARFUL PHILISTINE



by WILLIAM BREEN

*You champ on spongy toadstools, hateful treat!
Fearful of poison in each bite you eat:
He feasts on mushrooms fine as those
which Claudius for his special eating chose,
Till one more fine, provided by his wife,
Finished at once, his feasting and his life!*

Juvenal: Satires

Here we encounter yet another philistine, and this one is really strange! He is described as being "fearful of poison in each bite," and yet he continues to champ away on his "hateful treat." Masochistic masticator! As for the "spongy toadstools"—the spongy *mushrooms* that Claudius "for his special eating chose" were undoubtedly morels.

The morel, along with the chanterelle and cep, is one of the all-time favorite Big Three in mushroom cookery. A murderous spouse would be frustrated by any of them unless "one more fine" were introduced—juicy bits of *Amanita phalloides* frisking about in the sauce would do the trick. I expect *that* mushroom is why Claudius frisked no more.

You may remember from the mycophagial ruminations in "Chanterelle Cuisine and the Fearful Philistine" (*Terra*, January/February 1986) that the distinctive apricot-mushroom quality of

the chanterelle is elusive and must be coaxed to the fore. *Sauté* and *liquid* become the cook's key words, particularly with our California chanterelles—we sauté them first and use the exuded liquid in other dishes.

While the chanterelle must be wooed and won through unrelenting TLC, the morel need not be likewise pampered. Its flavor and aroma are potent, almost raunchily robust. One discerns a heady and appetizing effluence that invokes the nostalgia of the woods or the ocean—a hint of scallops, perhaps? Because of its assertive taste, the morel is the only mushroom I know of that almost bears up under the heavy hands of cooks who prepare their mushrooms with large dollops of onions, garlic, aromatic herbs, tomatoes, assorted spices, and wines and liquors and liqueurs of all sorts—almost. To those game but misguided individuals I say, "That might be very nice with lentils, but please leave out the

mushrooms."

At least no one would dream of peeling morels as a well-meaning cook did with her chanterelles mentioned in "Chanterelle Cuisine and the Fearful Philistine." It pleases me to say that there is nothing whatever on a morel to be peeled! Peeling mushrooms steals flavor and is but a throwback to the likes of Mrs. Somerset Maugham, who desired to create for herself an all-white environment. Her husband's passion for dry martinis was the sorrow of her life, it is said, because she could find no way to make them satisfactorily opaque.

Doubtless Mr. Maugham ate his morels elsewhere for morels are never really white. *Morchella deliciosa* appears almost so, but the gray of its pits is much darker than its light gray ridges, giving it a two-tone appearance. *Morchella esculenta* is usually a yellowish-buff but can range in tone through putty to cinnamon. *Morchella angusticeps* and *Morchella elata* can be light gray-brown to tawny brown but are usually darker. Those that are a beautiful lavender-washed brown, a deep brown, or a brownish-black are richest in flavor. *Morchella conica*, often placed in the so-called black group of morels, is usually closer to beige. Fresh, any or all of these morels may appear in gourmet specialty stores and markets from mid-March to mid-June. Although most of them will be from the Pacific States, some may be from Idaho or Canada.

A morel stem is often called the "foot" and in color is cream, buff, or pinkish buff. With black morels this contrast is quite striking. All morels look vaguely like pine cones and in the forest one doesn't always see that foot. A nice feature of the morel is that when the foot is (no, I can't say it!)—when the stem is cut off, a wonderful hollow cap is revealed. Fresh morels have caps from about two to six inches deep, and the larger ones are perfect for stuffing.

The stems have a hollow interior too, and although small it occasionally tempts tiny critters such as an errant ant or centipede to take up residence in those nice, commodious caps. Not to worry, all such unwelcome tenants will be evicted as a result of the cleaning process. In the market observe only the surfaces and textures of the cap. The morel's irregular vertical pits should be free of insect holes, and no part of the mushroom should be limp. The morel can be a bit dry and flaky, for they will plump when washed. Little sloughed-off flakes are acceptable. Wet or slippery morels are to be avoided.

Those who say mere blowing, shaking, and brushing will suffice to clean morels are pushing their luck. Some morels are definitely more tenaciously gritty than others, and miniscule bits of dirt can be firmly embedded in those pits. For these

reasons it is best to put all fresh morels one buys into a bowl of water with a bit of salt or vinegar. Cut off the stems and put them in as well. After five minutes rinse them under flowing water. Drain on paper towels. The flavor loss, if any, will be undiscernible. Science, after all, has yet to provide us with electronic taste buds.

Suppose we have located some fresh morels and bought a pound and a half. Let's go for a real Epicurean experience and make "Chicken Breasts with Morels and Tarragon in Cream." A chilled young Muscadet (usually best married to oysters) would be outstanding with this because its tartness provides contrast and freshens the palate for the beautiful morel flavor. The tarragon will also emphasize the morel's uniqueness.

It was Truman Capote who, when asked the difference between the rich and the poor, replied, "The rich serve



better vegetables. They have little carrots, tomatoes, and potatoes so small they seem scarcely born. That's about as close to caviar as you can get—which is of course something *un-born*." I suppose the epitome of luxury would be to serve tiny stuffed morels. A syringe and hypodermic needle would be required to do the job. Forget it. No, wait...we could stuff them with *caviar*, prodding each egg along with a scalpel. You see, Truman, wherever you are, it is possible to get closer. It is just that we do not choose to.

Let's stuff some more reasonably sized morels. There are innumerable ways to do this. Rice, herbs, pine nuts, and buttery bay scallops are great. Rice, minced salmon, a little teriyaki sauce, and chopped almonds—are also great. What about roquefort cheese, chopped walnuts, and green onion with bread crumbs? Yes indeed! Then there's spinach (first frying the well-drained spinach in butter until it's crisp), feta

cheese, minced shallots, and a little gin! Well, we could go on and on. However, let's try "Stuffed Morels aux Rancho Palos Verdes." It's fun and, while it has a lot of things in it, it is always deliciously morelish. A Gamay Beaujolais is nice with morels done this way, but not a full-bodied red wine.

I am so enamored of fresh morels that I want to present to you "Sauced Morels Stuffed with Veal, Beef, or Chicken," which incorporates two interesting ideas. The first is that of making a sauce with which to slather your stuffed morels and in so doing using the morel stems. The second idea is to make a sauce based on a stock made from the stuffing ingredient.

Morels, unless stuffed, are usually best done using cream and/or a good stock. They are wonderful simmered in either or in a combination of both. The choice of seasoning is infinite, and the thing to do is to develop an instinct. Sautéed morels are delicious, but it seems a rather lowly treatment for something so rare and wonderful...and they are so hard to come by fresh. Dipped in a light batter, coated with minced parsley, and french fried—a bit more special. Or sauté them and stir in some cream with a touch of some freshly minced herb. Any appropriate sauce can be used over sautéed morels too. If we batter them, a little curry powder is a morel flavor catalyst.

Since we don't eat any of the Big Three (chanterelles, morels, and ceps) anything like daily, I feel we need not make calories a consideration in the way we prepare them. The mushrooms themselves are decidedly low in calories and are surprisingly nourishing. They are high in protein, minerals, and vitamins. Morels contain vitamins A and D and also produce an enzyme that helps humans digest proteins. Morels are good little beasts in every way—except raw. Forget marinades too—morels *must be cooked*, for they contain suspect compounds that, however, accommodately evaporate during cooking. Fear not, ye philistines!

Fresh morels are rather difficult to find, but happily, dried morels are almost always available and are excellent. Usually, but not always, they are too small to be stuffed but can be adapted to all other morel cookery. The very small ones, by the way, are particularly delicious and sometimes are the most abundant. Canned morels vary in quality and are rarely seen on store or market shelves.

Suppose we buy two ounces of dried morels. To reconstitute them we'll put them in a pot and cover them with boiling water. Cover the pot and let them sit for thirty minutes. Then using a slotted spoon remove the morels, reserving the liquid. If they seem sandy, carefully wash them under running water.

(Continued on page 29)

CHICKEN BREASTS WITH MORELS AND TARRAGON IN CREAM

1½ lbs fresh morels
4 oz unsalted butter
6 boned and skinned chicken breasts or
12 suprêmes (half breasts)
½ c dry Madeira or dry Vermouth
1¾ c heavy cream
½ T freshly chopped tarragon
lemon juice
salt and pepper

Preheat the oven to 400 degrees. Clean the morels. Leave small bite-size mushrooms intact; slice the medium ones in half vertically, and slice the larger ones horizontally into wreathlike rings about three-eighths of an inch thick. Chop up the stems.

Clarify the butter and pour it into a flame-proof casserole or heavy metal pot. Color the chicken breasts in the butter until they are golden brown—about three minutes for each side. Remove them to a dish and deglaze the casserole or pot with Madeira or Vermouth—

stirring it down to an essence and taking care not to scorch it.

Add the cream and return the chicken breasts to the dish. Add the morels and chopped stems and add the tarragon. Cover the dish or pot and cook in the oven for eight to ten minutes.

Remove from oven and place chicken breasts on a hot serving dish or individual heated plates. Stir a little lemon juice and some salt and pepper into the cream. If it seems a bit thin, stir and heat just a little more. Pour over the chicken and serve. You will have six ample servings.

STUFFED MORELS AUX RANCHO PALOS VERDES

12 to 16 medium to large fresh morels
2 green onions, chopped
½ green bell pepper, chopped
¼ c chopped parsley
½ c chopped ham
½ c chopped clams
3 oz unsalted butter
double dash nutmeg
dash ground cloves
½ c bread crumbs
salt and pepper
1 T + 2 T cognac
paprika
parsley sprigs
lemon wedges

Clean the morels; chop the stems and put them aside. Melt two ounces of the butter in a large heavy-bottomed pan and add the morel caps. Baste them gently over low heat until they are butter-bathed in each and every pore. Remove the morels. (This basting takes only a moment and must be done however the morels are stuffed. It seals in the moisture and flavor and enables the morel to retain its integrity of form when cooked. An effete morel is dispiriting to the diner.)

Sauté lightly in the same pan the green onions and half pepper. Add another ounce of butter, the ham, clams, and chopped morel stems. Stir well over low heat, add the nutmeg, cloves, bread crumbs, salt, pepper, and one tablespoon of cognac. Stir until all is well mixed.

Remove the stuffing mixture from heat. Salt if needed. Stuff the morel caps through the convenient hole in the bottom. Use a teaspoon (both ends) and a forefinger to insert the stuffing. If the morels are very meaty (and the black ones often are), split them vertically without severing. By doing this we can mound up the stuffing, keeping the edges neat. The morels laid stuffing side up will look like charming little boats.

Put the morels, however stuffed, in a well-buttered baking dish (vertically if intact) and add the remaining cognac to the dish. Cover and bake for twelve minutes. Sauce with the accumulated liquor before serving; sprinkle morels with a little paprika and parsley. Garnish each serving with a lemon wedge (to be used) and a sprig of parsley. Serves four.

SAUCED MORELS STUFFED WITH VEAL, BEEF, OR CHICKEN

12 to 16 medium to large fresh morels
5 T butter
1 c ground veal, beef, or chicken
1 egg, beaten
¼ c cream
¼ c bread crumbs
1 T Armagnac
¼ t each fresh marjoram and rosemary (veal)
thyme and rosemary (beef)
tarragon and rosemary (chicken)
salt and pepper

SAUCE

1 c + 2 T veal, beef, or chicken stock
1 chopped shallot
1½ c cream
¼ c dry sherry
3 T butter
3 T flour
1 T Armagnac
salt and pepper

Clean the morels as described in the text and chop the stems and put them aside. Baste the caps in two tablespoons of butter as in "Morels aux Rancho Palos Verdes." Put mushrooms aside. Melt one tablespoon of butter in the same pan; add the veal, beef, or chicken. Sauté briefly. Mix well with the egg, cream, bread crumbs, Armagnac, and appropriate herbs. Add salt and pepper.

Stuff the morels and put them aside while preparing the sauce. Mix together one cup of stock (veal, beef, or chicken), the shallot, and morel stems in a blender. Pour into a saucepan, add 1 cup of cream and the dry sherry. Bring to a boil and reduce the heat to low. In a small pan make a *roux* of four tablespoons of butter and the flour. Whisk with a wire

whisk until golden and bubbly. To it slowly add one-half cup of cream, whisk in the stock and cream mixture, and return sauce to saucepan. Put aside, keeping warm.

Place the stuffed morels in a baking dish with a little melted butter and one tablespoon of Armagnac. Add two tablespoons of stock to the dish. Cover and bake at 375 degrees for fifteen to twenty minutes. When ten minutes have passed, bring the sauce to a boil, lower the heat, add salt and pepper, and allow to simmer gently until the morels are cooked. Add the baking juices to the sauce, stirring well, and serve sauced morels. This will feed four to six. Chopped colorful sweet peppers make an attractive garnish.

MOREL SOUP

1 oz dried morels, reconstituted,
+ 1 cup liquid
2 T unsalted butter
2 shallots, chopped
4½ c beef broth
¼ c Madeira
2 pinches minced tarragon
salt and pepper
juice ½ lime
lime garnishes

Following directions in the text, reconstitute one ounce of dried morels. Dice half the morels and leave the other half intact. In a heavy skillet melt the butter and sauté the shallots until soft. Add the diced and whole morels, sautéing with frequent stirring until all the liquid evaporates. Add the shallots and morels to the liquid left over from soaking the mushrooms plus the broth and the Madeira. Season with tarragon. Simmer soup until reduced to five cups, which will take about an hour. Add salt and pepper and stir in the lime juice. Garnish each serving with a thin slice of lime. Serves four to six.

MOREL PASTA SAUCE

½ c dry red wine
1 beef bouillon cube
3 T tomato paste
3 slices bacon, diced
1 T olive oil
1 clove garlic, minced
1 oz dried morels, reconstituted
1 lb can tomato sauce
pinch dried basil and thyme
freshly minced parsley
black pepper
romano cheese

Heat the wine and in it dissolve the beef bouillon cube. Stir in the tomato paste. Brown the diced bacon in a heavy skillet and drain off all but one tablespoon of bacon dripping. Add to it the olive oil, garlic, and the reconstituted morels (if small, keep the morels whole). Add the wine mixture, tomato sauce, and stir all with the morels, plus a good pinch each of the dried basil and thyme. Simmer sauce for at least half an hour, adding wine as necessary. Stir in a little freshly minced parsley before serving on the pasta of your choice. Grind a little black pepper over the servings and sprinkle with freshly grated romano cheese. Serves two to four.

AMEDEO'S MOREL FONDUE

1 clove garlic
¼ bottle Neufchatel wine
½ c Emmenthal cheese, grated
½ c Gruyère cheese, grated
½ c Appenzeller cheese, grated
1 T cornstarch
Kirsch to taste
Approx. ¼ cup cream
1 c diced morels (fresh or reconstituted dry)
½ c puréed morels (fresh or reconstituted dry)
French or Italian bread, cubed

Rub your fondue pot with garlic and heat the wine in the pot. Add the cheese and stir in figure-eight patterns until the cheese is melted. Stir in the cornstarch and kirsch. Add the cream, continuing to stir until the fondue is no thinner than a thick cheese sauce. Add the diced and puréed morels, which you have already sautéed in butter. Serves two.

MOREL SAUCE SUPRÊME

½ c flour
10 T melted unsalted butter
2 c boiling chicken stock
dash nutmeg
¼ lb medium-size morels (fresh or reconstituted)
salt and pepper
1 t tarragon
2 c heavy cream
lemon juice

Melt butter and whisk flour in well with a wire whisk. Add chicken stock and nutmeg. Slice morels, horizontally into three-eighth-inch wreathlike slices. Chop stems and add. Reduce sauce by one-third, cooking slowly so as not to burn it. Season with the salt, pepper, and tarragon. Gradually stir in the cream over heat. Add a little lemon juice.

MOREL AND VEGETABLE PÂTÉ

½ lb morels (fresh or reconstituted)
1 clove garlic
1 onion
½ c carrot, grated
½ c zucchini, diced
½ c tomatoes
½ c white turnip
½ c ground walnuts
½ c grated Gruyère
2 T freshly minced parsley
½ t each dried basil and thyme
1½ T butter
salt and pepper
2 eggs, lightly beaten

Mince the morels, garlic, and onions. Cook the onions and garlic in a heavy skillet until softened. Add the morels. Salt and pepper to taste. Cook, stirring occasionally until almost all the liquor is evaporated. In a blender or food processor purée the mixture until smooth and transfer to a bowl. Add the vegetables, the eggs, walnuts, Gruyère, and herbs. Mix well and check salt and pepper.

Spoon mixture into a small, well-buttered loaf pan (9 x 5 x 3 inches is the standard small size) and cover with a triple layer of buttered foil. Set the pan in a baking dish (around 12 x 8 x 2¼ inches) with water two-thirds up the side of the loaf pan. Bake for an hour and fifteen minutes at 350 degrees or until a skewer inserted in the center comes out clean. Transfer the loaf pan to a rack, let the pâté cool, and chill it overnight. Remove the foil, place a platter over the pan, and invert the pâté onto it. Sliced, this will serve eight as an hors-d'oeuvre.

(Continued from page 26)

Strain the liquid, using a coffee filter or a double thickness of cheesecloth, and reserve in another pot. We can make "Morel Soup" with one ounce of those morels and one cup of the liquid, and "Morel Pasta Sauce" with the other ounce.

Morels work very well with cheese. The Swiss, for instance, love a morel fondue and, luckily, I have an authentic one called "Amedeo's Morel Fondue" that I am young and foolish enough to share with you. Choose your place and your partner carefully for should you drop a cube of bread into the fondue pot, it is then customary to kiss the person on your left.

Spongy morels in strong ragousts are found,

And in the soup the slimy snail is drown'd.

John Gay: *Trivia*

At least John Gay had the taste to choose "ragousts" instead of "stewes." "Stew" always has a sort of *Grapes of Wrath* connotation to it. You know, "Ma's done found a can of stewed tomatoes in the back of the Ford. The kids'll eat tonight!" But a robust beef ragout loaded with morels, onions, potatoes, and some rich brown sauce would be good indeed. We would keep the vegetables and pieces of beef small so as not to overpower any diminutive morels. As for what "drown'd" in the soup, we would leave them out.

But what about those "slimy snails"? Think *escargots* and it gets better. And, after all, it is fairly common practice to stuff the caps of our cultivated mushroom *Agaricus bisporus* with escargots in parsley and garlic butter. Other than lingering fear and philistinism, what prevents us from using morels and escargots together?

One day I intend to be very brave and incorporate morels and escargots into a sauce suprême, which is a sauce based on cream and chicken stock. I will first prepare my escargots and morels with butter, parsley, and garlic—stirring all into the sauce and adding a little more freshly minced parsley. I will simmer the whole, thinning with a little white wine if necessary. To each serving would be added a teaspoon of Pernod. Over rice it is certain to be good. While I work up my courage, let's use the sauce suprême to make "Morel Sauce Suprême," which we will pour over individual Cornish game hens that we have stuffed with rice and (yes!) more morels. A white Cabernet Sauvignon would not be bad with this

For those who do hunger after the earth—

lie excrescences called mushrooms.

John Gerade



Somewhat I have begun to hunger for "Morel and Vegetable Pâté." I will eat it as an hors-d'oeuvre with some crusty French bread alongside and some cornichons—or, some pickled morels. The latter are best done with olive oil, white wine vinegar, and peppercorns, leaving out the pickling spices. The pâté can also be sauced with sour cream if a little Dijon mustard, olive oil, and white wine are stirred in. Top it with fresh minced parsley if you do this.

On meadows, where we were wont to camp

*White mushrooms rosy gilled,
At dawn we gathered dewy-damp
Until the basket filled.*

Anonymous

Probably that anonymous person was just another fearful philistine who ate only *Agaricus campestris* and *Agaricus bisporus*. Let's rise above that sort of thing and begin to discover what mycophagy is really all about. No better

The author-artist's fantasy impression of Kate Sargent, American pioneer of mycophagy in the late Victorian era. She is conceived of as a lady of style and is seen here serving up a morel soufflé that Henri, her milliner, has reluctantly agreed to accept as partial payment for his latest creation—a stupifyingly fashionable morel boater.

place to do it than with morels. Remember, mycophagists stand tall and enjoy life. Mycophobes do not, for (and here comes a truly terrible pun) they are really morel less unable to.

In the July/August 1986 issue of Terra we will be treated to "Cep Cuisine and the Fearful Philistine."

William Breen describes himself as a world-weary fashion designer who became a writer-artist with a business in wild edible mushrooms. He is also interested in food and wine as they relate to cooking and eating wild mushrooms in an inspired manner.



Susan Cipson

EXCEPTIONAL AQUAMARINE CRYSTAL DONATED. An aquamarine crystal of exceptional quality was recently donated to the Natural History Museum by Mr. Harold Savinar and Mr. and Mrs. Hyman Savinar. This was the finest crystal from a gem pocket discovered in July 1984 at the Lavra da Inveja ("mine of envy") near Marambaia in the Brazilian state of Minas Gerais. The crystals from this pocket possess a unique rounded shape caused by natural etching; because of this, the crystal donated by the Savinars has been dubbed the "Bullet" by Dr. Anthony R. Kampf, Curator of Mineralogy. The 2,879-karat crystal is of fine gem quality, being a deep greenish-blue and having a nearly flawless interior, and Dr. Kampf regards it as the finest aquamarine crystal in the museum's collection. It has been placed on exhibit in the hallway leading out of the new hall Gemstones and Their Origins.

NEW HOME FOR THE HISTORIC RECORDS SECTION. The Historic Records Section of the History Division has a new home for its extensive collection of historic photographs, maps, manuscripts, and prints. The new facility will also house Western History book materials from the Research Library. The movable storage system used in the new stacks provides almost seven thousand linear feet of shelf space—nearly double what would have been available on conventional shelving. The facility also includes a work area and a vault for rare

materials. These renovations were made possible by a grant from the Seaver Institute. Historic Records materials are available to researchers from 10 to 4, Tuesday through Friday, in the Seaver Center for Western History Research.

PADDY B. McHENRY LEPIDOPTERA LIBRARY WILLED TO MUSEUM. The Entomology Section and Research Library recently received the Lepidoptera (butterfly and moth) library of the late Paddy B. McHenry (1914–1985) of Burbank. Mr. McHenry's collection consists of books (including many that are old and rare), notes, microfilms, photocopies, and photographs that make up a comprehensive collection of original descriptions of North American butterflies. A large number of the books are new to the Research Library, being especially valuable additions to an already large and

comprehensive Lepidoptera library.

Mr. McHenry, who had worked at Andrew Jergens Company in Burbank from his graduation from high school until his retirement and who had no formal scientific training, for years researched and kept a library of the first descriptions of American butterflies from both European and American sources; these included descriptions from books going back to the first European descriptions of American natural history as well as more recent nomenclature reclassifications. He was also a Charter Member of the Lepidopterists' Society and the author of at least ten papers on nomenclature and bibliography of butterfly names. In addition, Mr. McHenry's brother, Victor McHenry, of Camp Sherman, Oregon, has donated specimens of North American butterflies that the two men collected over the years.



Butterfly-winged cherubs cavort on the hand-colored frontispiece of an eighteenth-century German treatise on Lepidoptera from the Paddy B. McHenry collection.



A 1902 view of a utopian schoolhouse, from *Technological Utopianism in American Culture*.

TECHNOLOGICAL UTOPIANISM IN AMERICAN CULTURE by Howard P. Segal. University of Chicago Press, 1985. 301 pp., illustrations, notes, appendix, bibliography; clothbound, \$30, paper, \$14.95.

Howard P. Segal's *Technological Utopianism in American Culture* analyzes futuristic ideas advanced by twenty-five late nineteenth- and early twentieth-century American writers. This body of literature includes such works as George Morison's *The New Epoch*, King Camp Gillette's *The Human Drift*, and *Life in a Technocracy* by Harold Loeb.

Technological utopian novels and tracts, which possessed the verve and excitement of contemporary science fiction, offered uncanny forecasts of the United States in the heyday of the Machine Age. The author claims that this literature, though symbolic and

exaggerated, drew a fairly accurate picture of later real-life changes and that these predictions helped define and shape our current ideas of progress.

Technological utopian novels, though little-read at the time, were still a highly perceptive and imaginative literary form. Segal notes that while there were some variations in technological utopian themes, these authors shared a vision of the future. For example, they almost uniformly predicted a society in which there was a near-perfect balance of urban and rural living—a pristine suburbia unmarred by foul air, refuse, or overcrowding. Industry and agriculture would function efficiently and cleanly, technocrats would replace politicians, and megalopolis would blossom throughout the country. Furthermore, a system of meritocracy—based on a highly valued work ethic—

would produce a new class structure. Maximum control and utility would be achieved by calling forth artistic and cultural forms compatible with a machine-oriented environment. The major challenge confronting human beings in this future would be the taming of nature and technology.

Segal depicts these writers as prophets of industrial and business innovations. Twentieth-century developments such as conservation, scientific management, national planning, and the growth of organizations and bureaucracies are all traced to technological utopian roots. Large American fairs and the Technocracy movement of the 1930s also appeared as early political and material expressions of these literary prophecies. Interestingly, the author views these writers as conservative yet ambitious dreamers who gave form and direction to the mainstream aspirations of their age.

The author validates technological utopianism while admitting that most of the writers considered in this study perceived technology itself as a potential threat to social values. Unfortunately, the author avoids the most critical questions regarding technology and the future: How will the Machine Age affect human values? Did these writers consider the ultimate results of a twentieth-century Machine Age culture? Were they in any position to do so? Did they glimpse the Orwellian nightmare revealed in later works on technology and culture? And if not, could or should they have done so? Finally, should we attach any historical significance to the obscurity of this literature amidst the ongoing technological revolution? In ignoring these questions Segal misses a unique opportunity to shed light on a controversial and timely subject.

On the whole, however, Segal's study is a provocative, highly original treatment. The text presents an engrossing and novel interpretation of an almost-forgotten body of literature, while the illustrations (taken from utopian writings) graphically express startling visions of the future. This book vividly portrays the intimate connections between early utopian imagination and real-life twentieth-century American development.

William L. Cumiford
Assistant Curator
Business and Industrial History



EBLA TO DAMASCUS



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